

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Stephen D. Smith et al.

Serial No.: 09/579,997

Filed: May 26, 2000

For: MODULAR MOTOR AND
HOUSING

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Group Art Unit: 2834

Examiner: Lam, T.

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#14 Appeal Brief
Hawkins
10/24/02

Assistant Commissioner
for Patents
Washington, D.C. 20231

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| CERTIFICATE OF MAILING 37 C.F.R. 1.8 | |
| I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date below: | |
| October 10, 2002 Date | <i>Carla Deblaw</i> Carla Deblaw |

Sir:

APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 1.191 AND 1.192

This Appeal Brief is being filed in furtherance to the Notice of Appeal mailed on August 9, 2002, and received by the Patent Office on August 19, 2002.

1. **REAL PARTY IN INTEREST**

The real party in interest is Schlumberger Technology Corporation, the Assignee of the above-referenced application by virtue of the Assignment to Schlumberger Technology Corporation recorded at reel 01834, frame 0689, and dated April 10, 2000, April 14, 2000, and May 12, 2000.

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2. **RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellants' legal representative in this Appeal. Schlumberger Technology Corporation, the Assignee of the above-referenced application, as evidenced by the documents mentioned above, will be directly affected by the Board's decision in the pending appeal.

3. **STATUS OF CLAIMS**

Claims 1-16 and 21-23 are currently pending, and claims 1-16 and 21-23 are currently under final rejection and, thus, are the subject of the Appeal.

4. **STATUS OF AMENDMENTS**

No amendments have been filed subsequent to final rejection.

5. **SUMMARY OF THE INVENTION AND OF THE EMBODIMENTS**

The present patent application relates to submersible electric motors used in submersible pumping systems to lift wellbore fluids from depths of up to several thousand feet. A conventional motor used to provide the equivalent pumping power on the surface cannot be used in a wellbore because the diameter of such a motor would be too wide to fit into the wellbore. Therefore, as compared to short, thick surface motors, the stators of submersible electric motors are relatively thin and extremely elongated. Elongating the stator allows the motor to produce the required torque to drive a pump by developing magnetic force over a stator of a much larger length. Thus, if long enough, a motor that produces a relatively smaller torque per foot can produce a sufficient total torque. Depending on the horsepower required of the motor, electric submersible pumping system motors can utilize stator assemblies thirty feet long or more.

Preparation of the stator windings utilizes long, thin polished rods that serve as needles for pulling the insulated, conductor wires through a lengthy assembly of stator laminations. This conventional process is a comparatively slow and expensive process for manufacturing such motors. Additionally, repair or rebuilding of such motors often requires complete destruction or tear down of the motor with little component repair value due to the unitary stator assembly.

In an effort to address these concerns, Appellants have disclosed a submersible pumping system 20 that utilizes a modular electric motor 22 to drive a submersible pump 24. Page 7, lines 11-14, Fig. 1. Instead of a unitary stator, that may be thirty feet long or more, the modular electric motor 22 utilizes modular stator sections, including, for example, a top stator section 42, a bottom stator section 44, and two middle stator sections 46. Page 8, lines 6-10, Figs. 1 and 2. Although two middle stator sections 46 are illustrated, the exact number of middle stator sections 46 in a given submersible electric motor 22 can vary depending on the system requirements. Page 8, lines 16-19, Figs. 1 and 2.

When the modular stator sections are joined, conductors in the top, middle and bottom stator sections are electrically coupled to a source of electrical power on the surface. Page 11, lines 1-5, Fig. 2. Electricity flowing through conductors 54 in middle stator sections 46 produces a rotating magnetic field that causes the rotor 60 within the modular stator to rotate about an axis 61. Page 11, lines 5-8, Fig. 2. Rotor 60 is coupled to and rotates a shaft 62, which, in turn, rotates pump 24. Page 11, lines 9-10, Fig. 2.

The modular stator sections may be mechanically coupled together in a variety of ways. Page 12, lines 4-5, Fig. 2. In the illustrated embodiment (see Figures 2, 9 and 10), mechanical

coupling is provided by plug connectors 52, 56, and by threaded collar assemblies mounted to outer housings 47, 57 and 65 of the top stator section 42, bottom stator section 44, and middle stator section 46, respectively. Page 12, lines 5-8, Fig. 2.

An alternate embodiment is illustrated in Figures 11 and 12. In this embodiment, a separate coupler 102 is used to couple two middle stator sections 104. Page 15, lines 25-Page, 16, line 2, Figs. 11 and 12. The separate coupling device 102 may be configured to electrically and mechanically connect stator sections 104. Page 16, lines 2-4, Figs. 11 and 12.

6. ISSUES

Issue No. 1:

Whether claims 1, 2, 6, 14, 15, and 21 are anticipated under 35 U.S.C. § 102(b) by the Rabson reference, U.S. Patent No. 4,815,949.

Issue No. 2:

Whether claims 3-5, 16, and 22 are unpatentable under 35 U.S.C. § 103(a) as being obvious over the Rabson reference in view of the Schob reference, U.S. Patent No. 5,939,813.

Issue No. 3:

Whether claim 13 is unpatentable under 35 U.S.C. § 103(a) as being obvious over the Rabson reference in view of the Ekstromer reference, U.S. Patent No. 2,098,958.

Issue No. 4:

Whether claims 7-12 and 23 are unpatentable under 35 U.S.C. § 103(a) as being obvious over the Rabson reference in view of the Ekstromer reference, U.S. Patent No. 1,960,484.

7. GROUPING OF CLAIMS

Issue No. 1:

Independent claims 1, 14, and 21 will stand separately. Claims 2 and 6 will stand with claim 1 and claim 15 will stand with claim 14.

Issue No. 2:

All claims will stand together.

Issue No. 3:

There is only one claim at issue in Issue No. 3.

Issue No. 4:

All claims will stand together.

8. ARGUMENT

As discussed in detail below, the Examiner has improperly rejected the pending claims. The Examiner has misapplied long-standing and binding legal precedents and principles in rejecting the claims under Section 102(b) and Section 103(a). Appellants respectfully request full and favorable consideration by the Board, as Appellants strongly believe that claims 1-9 and 19-27 are currently in condition for allowance.

Issue No. 1:

Claims 1, 2, 6, 14, 15, and 21 were rejected under 35 U.S.C. §102(b) as being anticipated by Rabson, U.S. Patent No. 4,815,949. Claims 1, 14, and 21 are independent claims. Claims 2 and 6 depend from independent claim 1 and claim 15 depends from independent claim 21.

Claims 1, 2, 6, 14, 15, and 21 are not anticipated because the Rabson reference does not disclose all of the recited features of the claims. Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under section 102, a single reference must teach each and every element or step of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984).

Claims 1, 2 and 6 are not anticipated because the Rabson reference does not disclose all of the recited features of the claims. Independent claim 1 recites the following:

1. An electric motor, comprising:

a plurality of stator sections, each stator section including an outer housing, wherein the plurality of stator sections are mechanically and electrically coupleable to form a stator of a desired length; and

a rotor, disposed within the plurality of stator sections.

One of the recited features of claim 1 that is not disclosed by the Rabson reference is "a rotor disposed within the plurality of stator sections." The electric motor of the Rabson reference is a reciprocating electric motor, i.e., a linear electric motor. *See Rabson*, Abstract and col. 4,

lines 3-5. The reciprocating electric motor of Rabson has an armature or mover 83 for reciprocation coaxially with the housing 77. *See Rabson*, col.2, line 67-col. 3, line 2. The armature or mover 83 of the Rabson reference simply does not rotate or revolve. Rather, the field winding 91 of the Rabson reference causes the armature 83 to reciprocate in a linear up-and-down manner to drive a pump piston. *See Rabson*, col. 3, lines 45-68. Therefore, the armature or mover 83 of the Rabson reference is not a rotor.

In the Response to Arguments portion of the Official Action mailed on May 9, 2002, the Examiner stated that:

In response to applicant's argument that "Rabson reference has an armature or mover 83, not a rotor." The examiner submits that (sic) Rabson reference discloses electric motors (col. 1, line 9) that inherently have a stator and a rotor as known in the electric motor art. Furthermore, the term "armature 83" as disclosed by Rabson is a rotor as clearly defined by Webster's dictionary (see a highlight of the attached copy).

The copy of Webster's dictionary that was provided by the Examiner contained several definitions of the word "armature." Among other definitions, Webster's dictionary defined an "armature" as: "2.b.: a usu. rotating part of an electric machine (as a generator or motor) which consists essentially of coils of wire around a metal core and in which electric current is induced or in which the input current interacts with a magnetic field to produce torque." Another definition of "armature" found in the copy of Webster's dictionary provided by the Examiner is: "2.c: the moveable part of an electromagnetic device (as a loudspeaker)."

A definition of "armature" that states that an armature is *usually* a rotating part of an electric machine does not mean that everything entitled an "armature" is a rotating part of an electric machine. That a rotating part of an electric machine may be defined as an "armature" is irrelevant. What is relevant is that the Rabson reference discloses that the armature or mover 83 reciprocates, and does not rotate. Thus, the armature or mover 83 of the Rabson cannot be defined as a "rotor."

However, the definition of "rotor" provided by Webster's Collegiate dictionary does require a part to revolve or rotate. Webster's Collegiate dictionary defines a "rotor" as: "1.a.: a part that revolves in a stationary part" and "b.: the rotating member of an electrical machine." Therefore, the armature or mover 83 of the Rabson reference may be identified as an "armature," but it is cannot be considered a "rotor." Thus, the Rabson reference does not show "a rotor disposed within the plurality of stator sections." Furthermore, the stator of a linear electric motor is constructed differently than the stator of a rotary electric motor.

Other recited features of independent claim 1 that are not shown by the Rabson reference are "a plurality of stator sections, *each stator section including an outer housing*, wherein the plurality of stator sections are mechanically and electrically coupleable to form a stator of a desired length." In the Rabson reference, a plurality of coils 92 are stacked coaxially within a motor housing 77 on a support tube 113. *See Rabson*, col. 4, lines 5-7. The coils 92 are stacked in groups, each group constituting one motor stator module or unit. *See Rabson*, col. 4, lines 8-11. However, all of the coils 92 are housed within a single motor housing 77. Therefore, only a single stator section is shown in the Rabson reference because all of the coils 92 are housed in a

single outer housing 77. Accordingly, the motor 75 of the Rabson reference does not disclose “a plurality of stator sections.”

Furthermore, the Rabson reference does not disclose “a plurality of stator sections, wherein the plurality of stator sections are *mechanically coupleable*.” The Rabson reference does not disclose that either the individual coils 92 or the motor stator modules are mechanically coupleable to other individual coils 92 or motor stator modules. Therefore, the Rabson reference does not disclose “a plurality of stator sections, each stator section including an outer housing, wherein the plurality of stator sections are mechanically coupleable,” as recited in claim 1. Finally, neither the individual coils 92, nor the motor stator modules or units, are mechanically and electrically coupleable to form a stator *of a desired length*. The length of the single outer housing 77, not the individual coils 92 or the motor stator modules or units, defines the length of the field winding 91 of the Rabson reference.

For all of these reasons, independent claim 1 is not anticipated by the Rabson reference. Claims 2 and 6, which depend from independent claim 1, also are not anticipated by the Rabson reference.

Additionally, claims 14 and 15 are not anticipated by the Rabson reference. Claim 15 depends from independent claim 14. Independent claim 14 recites the following:

14. A submersible pumping system, comprising:
a submersible electric motor, including:

a plurality of modular motor sections, each motor section includes a stator section and a housing section, wherein the modular motor sections are mechanically and electrically coupleable to form a motor of a desired length;

a rotor disposed within the plurality of modular motor sections;
and

a submersible pump, drivingly coupled to the rotor of the submersible electric motor.

As with claim 1, one of the recited features of claim 14 that is not disclosed by the Rabson reference is "a rotor disposed within the plurality of modular motor sections." As discussed above, the motor 75 of the Rabson reference is a linear electric motor. The armature or mover 83 of the motor 75 of the Rabson reference simply does not revolve or rotate. Therefore, the armature or mover 83 of the Rabson reference is not a rotor.

Furthermore, the Rabson reference does not teach a plurality of modular motor sections. The only housing section shown in the Rabson reference is the single outer housing 77. Therefore, the Rabson reference only discloses a single stator section because only a single outer housing is shown by the cited reference. The Rabson reference simply does not disclose a plurality of modular motor sections wherein *each* modular motor section includes a stator section *and* a housing section. Furthermore, the stacked component stator of Rabson is not a modular motor section. Although the coils of Rabson may be stacked, the field winding 91 of the Rabson reference does not reflect modular motor sections. Electrical connectors 163 and 165 of Rabson require connectors 167 in order to interconnect the groups of coils. *See Rabson*, col. 5, lines 21-30. To create sets of coils for the linear motor of Rabson, connectors 167 are necessary to connect each coil in each group of one set to a corresponding coil in another group of that same set. Thus, connectors 167 must be run from connectors 163 and 165 of one coil, to the outer

edge of the coil, along the outside of a group of coils, to the outer edge of another coil in another group of that set and, finally, to connectors 163 and 1651. *See Rabson*, Fig. 5. This connection process must be completed coil-by-coil as the individual coils are stacked, not just as each group of coils is stacked. The motor 75 of the Rabson reference simply does not disclose a rotor or a plurality of modular motor sections. Therefore, the Rabson reference does not show “a rotor disposed within the plurality of modular motor sections,” as recited in claim 14.

Other recited features of claim 14 that are not disclosed by the Rabson reference are “a plurality of modular motor sections, each motor section includes a stator section and a housing section, wherein the modular motor sections are mechanically and electrically coupleable to form a motor of a desired length.” First, as discussed above, the motor 75 of the Rabson reference does not comprise a plurality of modular motor sections, wherein each motor section includes a housing section. Second, the Rabson reference does not disclose “a plurality of modular motor sections, wherein the plurality of modular motor sections are *mechanically coupleable*.” The Rabson reference does not disclose that either the individual coils 92 or the motor stator modules are mechanically coupleable to other individual coils 92 or motor stator modules. Therefore, the Rabson reference does not disclose “a plurality of modular motor sections, wherein the modular motor sections are mechanically and electrically coupleable,” as recited in claim 14. Finally, neither the individual coils 92 nor the motor stator modules or units are mechanically and electrically coupleable to form a motor *of a desired length*. The length of the single outer housing 77, not the individual coils 92 or the motor stator modules or units, defines the length of the field winding 91 of the Rabson reference. For all of these reasons, independent claim 14 and dependent claim 15 are not anticipated by the Rabson reference.

Independent claim 21 also is not anticipated by the Rabson reference. Independent claim 21 recites the following:

21. An electric motor for a submergible pumping system, comprising:

a plurality of stator sections adapted to form a stator of a desired length, wherein each of the plurality of stator sections comprises a mechanical and electrical coupling to permit selective attachment to an adjacent stator section; and

a rotor disposed within the plurality of stator sections.

One of the recited features of claim 21 that is not disclosed by the Rabson reference is a rotor. As discussed above, the motor 75 of the Rabson reference is a linear electric motor, not a rotary electric motor. The armature or mover 83 does not revolve or rotate. Therefore, the armature or mover 83 of the Rabson reference is not a rotor.

Furthermore, the Rabson reference does not teach “a plurality of stator sections adapted to form a stator of a desired length, wherein each of the plurality of stator sections comprises a mechanical and electrical coupling to permit selective attachment to an adjacent stator section.” The Rabson reference does not disclose that either the individual coils 92 or the motor stator modules has a mechanical coupling to permit selective attachment to an adjacent coil 92 or motor stator module. Therefore, the Rabson reference does not anticipate claim 21.

For all of these reasons, the Rabson reference does not anticipate claims 1, 2, 6, 14, 15, and 21. Accordingly, Appellants respectfully request that the Board withdraw this rejection and allow claims 1, 2, 6, 14, 15, and 21.

Issue No. 2:

Claims 3-5, 16, and 22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Rabson in view of Schob, U.S. Patent No. 5,939,813. Claims 3-5 depend from independent claim 1, claim 16 depends from independent claim 14, and claim 22 depends from independent claim 21.

Claims 3-5, 16, and 22 are patentable because the cited references, either alone or in combination, do not disclose, teach, or suggest all of the recited features of the claims and because there is no suggestion to combine the Rabson and Schob references. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Claims 3-5, 16, and 22 are patentable because the cited references, either alone or in combination, do not disclose, teach, or suggest all of the recited features of the claims. As discussed above, the Rabson reference does not teach, suggest, or disclose all of the recited features of claims 1, 14, and 21. In addition, the combination of the Rabson and Schob references also fails to teach, disclose, or suggest these recited features of independent claims 1. Therefore, independent claims 1, 14, and 21 are patentable over the cited references. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, claims 3-5, 16, and 21 also are nonobvious and patentable over the cited references. Furthermore, claims 3-5, 16, and 21 are patentable by virtue of their own recited subject matter.

Furthermore, claims 3-5, 16, and 22 are patentable because there is no suggestion to combine the references. In the Official Action, the Examiner stated that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stator sections of Rabson to accommodate the stator sections to allow the fluid flows therethrough as taught by Schob. The fluid flows (sic) the stator sections in order to provide an improvement of cooling of the stator sections.

However, as discussed above, the Rabson reference is a linear electric motor. The Schob reference, on the other hand, is a rotary electric motor. A linear electric motor operates in a far different manner than a rotary electric motor. Most significantly, the stator sections of a linear electric motor and a rotary electric motor are different in design and operation. Namely, the stator of a linear electric motor and the stator of a rotary electric motor are adapted to arrange their stator windings in different orientations. It would not be obvious to one of ordinary skill in

the art to adapt the stator of a linear electric motor in accordance with the stator of a rotary electric motor. In fact, it would defeat the purpose of the linear motor.

For all of these reasons, claims 3-5, 16, and 22 are patentable over the cited references. Accordingly, Appellants respectfully request that the Board withdraw this rejection and allow claims 3-5, 16, and 22.

Issue No. 3:

Claim 13 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rabson in view of Ekstromer, U.S. Patent No. 2,098,958. Claim 13 is patentable because the cited references, either alone or in combination, do not disclose, teach, or suggest all of the recited features of the claims.

Claim 13 depends from independent claim 1. As discussed above, the Rabson reference does not disclose all of the recited features of claim 1. In addition, the combination of the Rabson and Ekstromer references also fails to disclose, teach, or suggest these recited features of claim 1. Therefore, claim 1 and claim 13, which depends from claim 1, are nonobvious and patentable over the cited references. Furthermore, claim 13 is patentable by virtue of its own recited subject matter.

In addition, claim 13 is patentable because there is no suggestion to combine the references. In the Official Action, the Examiner stated that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the stator sections of

Rabson and modify to adapt the stator sections of Ekstromer, having a plurality of conductors or conductive elements (38) including a hollow receptacle (36 fig. 4) sized to (sic) received a corresponding protrusion (37) in order to improve electrically and mechanically connection between the stator sections.

As discussed above, the Rabson reference is a linear electric motor. The Ekstromer reference discloses a plurality of rotary electric motors coupled together. The linear electric motor of Rabson operates in a far different manner than the rotary electric motor of Ekstromer. More importantly, the stator sections of the two references are completely different in design and operation. It would not be obvious to one of ordinary skill in the art to adapt the stator of the linear electric motor of Rabson in accordance with the stator of the rotary electric motor of Ekstromer.

For all of these reasons, claim 13 is patentable over the cited references. Accordingly, Appellants respectfully request that the Board withdraw this rejection and allow claim 13.

Issue No. 4:

Claims 7-12 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rabson in view of Ekstromer, U.S. Patent No. 1,960,484. Claims 7-12 and 23 are patentable because the cited references do not show all of the recited features of the claims.

Claims 7-12 depend from independent claim 1. In addition, claim 23 depends from independent claim 21. As discussed above, the Rabson reference does not disclose all of the recited features of independent claims 1 and 21. Therefore, the Rabson reference does not disclose all of the recited features of claims 7-12 and 23. Furthermore, the combination of the

Rabson and Ekstromer references also does not disclose, teach, or suggest these recited features of claims 7-12 and 23. Therefore, claims 7-12 and 23 are patentable over the cited references.

In addition, claims 7-12 and 23 are patentable because there is no suggestion to combine the references. In the Official Action, the Examiner stated that:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the stator sections of Rabson and modify to adapt the stator sections of Ekstromer, having a plurality of conductors or conductive elements (38) including a hollow receptacle (36 fig. 4) sized to (sic) received a corresponding protrusion (37) in order to improve electrically and mechanically connection between the stator sections.

However, as discussed above, the Rabson reference is a linear electric motor. The Ekstromer reference discloses a plurality of rotary electric motors that are coupled together. The linear electric motor of Rabson operates in a far different manner than the rotary electric motor of Ekstromer. As noted above, the stator sections of the two references are completely different in design and operation. It would not be obvious to one of ordinary skill in the art to adapt the stator of the linear electric motor of Rabson in accordance with the stator of the rotary electric motor of Ekstromer.

For all of these reasons, claims 7-12 and 23 are patentable over the cited references. Accordingly, Appellants respectfully request that the Board withdraw this rejection and allow claims 7-12 and 23.

9. **CONCLUSION**


In view of the above remarks, Appellants respectfully submit the Examiner has provided no supportable position or evidence claims 1, 2, 6, 14, 15, and 21 are anticipated under Section 102(b) or that claims 3-5, 7-13, 16, 22 and 23 are obvious under Section 103(a). Accordingly, Appellants respectfully request the Board find claims 1-16 and 21-23 patentable over the prior art of record, withdraw all outstanding rejections, and allow claims 1-16 and 21-23.

In accordance with 37 C.F.R. § 1.136, Appellants request that this and any future reply requiring an extension of time be treated according to the General Authorization for Extensions of Time previously submitted.

The Commissioner is authorized to charge the requisite fee of \$320.00, and any additional fees, which may be required, to the credit card, listed on the attached PTO-2038. However, if the PTO-2038 is missing, if the amount listed thereon is insufficient, or if the amount is unable to be charged to the credit card for any other reason, the Commissioner is authorized to charge Deposit Account No. 06-1315; Order No. REDA:0093 (89.0425).

Respectfully submitted,

Date: October 10, 2002


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APPENDIX

10. CLAIMS ON APPEAL

1. An electric motor, comprising:

a plurality of stator sections, each stator section including an outer housing,
wherein the plurality of stator sections are mechanically and electrically
coupleable to form a stator of a desired length; and

a rotor, disposed within the plurality of stator sections.

2. The electric motor as recited in claim 1, wherein the plurality of stator sections
includes:

a first stator section, having a plurality of conductors extending longitudinally
therethrough;

a second stator section, electrically coupleable to an electrical power source and to
the first stator section; and

a third stator section, electrically coupleable to the first stator section;

wherein electricity flowing through the plurality of stator sections produces a magnetic field that imparts rotative motion to the rotor.

3. The electric motor as recited in claim 1, wherein at least some of the plurality of stator sections are fluidly coupleable to allow a fluid flow therethrough.

4. The electric motor as recited in claim 2, wherein the first stator section and the second stator section are fluidly coupleable to allow fluid to pass between the first and the second stator sections.

5. The electric motor as recited in claim 2, wherein the second stator section is fluidly coupleable to an external device.

6. The electric motor as recited in claim 1, further comprising a plurality of seals disposed between stator sections.

7. The electric motor as recited in claim 1, wherein at least one stator section includes a plurality of conductors terminating at a plurality of corresponding protrusions.

8. The electric motor as recited in claim 7, wherein at least one stator section includes a plurality of conductive elements configured for engagement with the plurality of corresponding protrusions when the stator sections are mechanically coupled.

9. The electric motor as recited in claim 8, wherein each conductive element includes a hollow receptacle sized to received a corresponding protrusion.

10. The electric motor as recited in claim 1, wherein at least one stator section is coupled to an adjacent stator section by a separate coupling device.

11. The electric motor as recited in claim 10, wherein the coupling device is configured to mechanically and electrically couple the at least one stator section to the adjacent stator section.

12. The electric motor as recited in claim 10, wherein each coupling device includes a plurality of receptacles to receive a corresponding plurality of protruding conductors.

13. The electric motor as recited in claim 1, wherein each stator section outer housing includes at least one of a threaded collar and a threaded end.

14. A submersible pumping system, comprising:

a submersible electric motor, including:

a plurality of modular motor sections, each motor section includes a stator section and a housing section, wherein the modular motor sections are mechanically and electrically coupleable to form a motor of a desired length;

a rotor disposed within the plurality of modular motor sections; and

a submersible pump, drivingly coupled to the rotor of the submersible electric motor.

15. The submersible electric motor as recited in claim 14, wherein the plurality of modular motor sections includes:

a first stator section, having a plurality of conductors extending longitudinally therethrough;

a second stator section, electrically coupleable to a source of electrical power and to the first stator section; and

a third stator section, electrically coupleable to the first stator section;

wherein electricity flowing through the plurality of stator sections produces a magnetic field that imparts rotative motion to the rotor.

16. The system as recited in claim 15, further comprising a motor protector, wherein the first, second and third stator sections are fluidly coupleable so as to allow fluid to pass between the first stator section and the motor protector.

21. An electric motor for a submergible pumping system, comprising:

a plurality of stator sections adapted to form a stator of a desired length, wherein each of the plurality of stator sections comprises a mechanically and electrical coupling to permit selective attachment to an adjacent stator section ; and

a rotor disposed within the plurality of stator sections.

22. The electric motor as recited in claim 21, wherein each of the plurality of stator sections is fluidly coupleable to an adjacent stator section.

23. The electric motor as recited in claim 21, wherein each of the plurality of stator sections comprises a plurality of conductive elements configured for engagement with a corresponding plurality of conductive elements in an adjacent stator section.